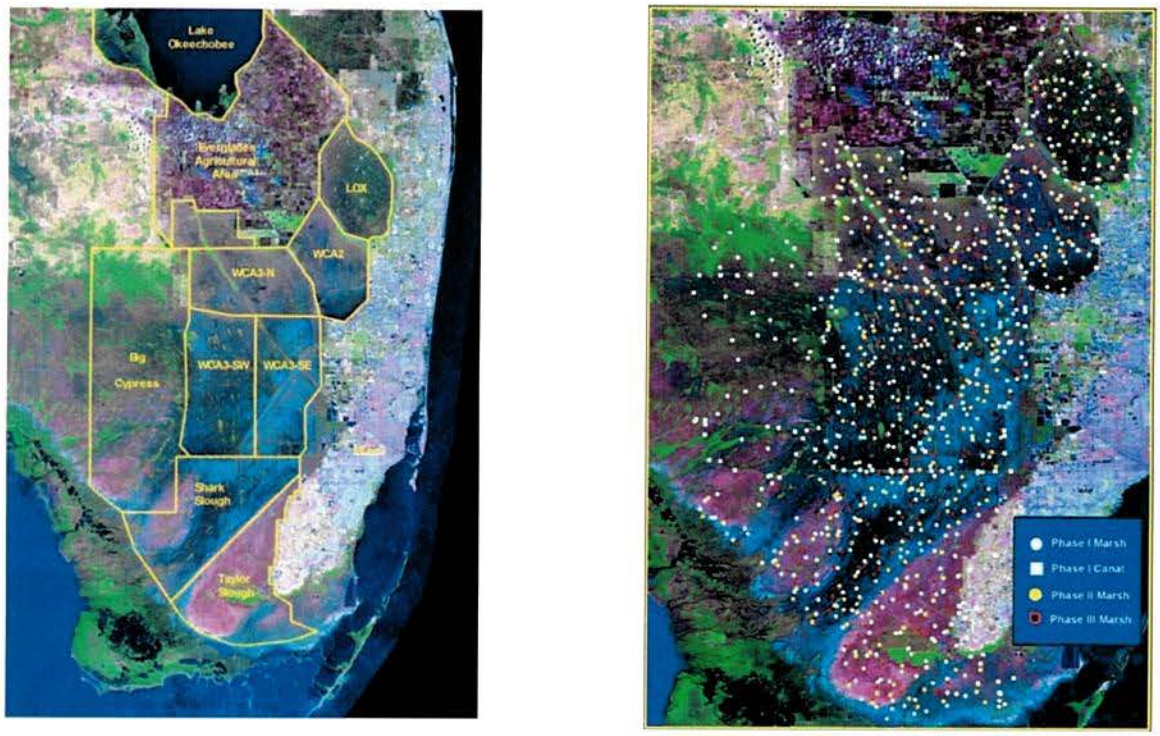
Figure 1. Everglades Ecosystem Assessment study area.




Left: Satellite image of the EEA Program study area. The seven subareas encompass the Everglades Ridge and Slough physiographic region (LOX, WCA2, WCA3-N, WCA3-SE, WCA3-SW, Shark Slough) and the Marl Prairie/Rocky Glades Physiographic region (Shark Slough and Taylor Slough). Right: Locations of the 1145 stations sampled in Phases I - III. Recent Phases have been focused on the main flow-way (the WCAs and the National Park).

Table 1. Budget for extramural funds for the Everglades Ecosystem Assessment Phase IV.

| **COST** | **ENP Share** |
|---|---|
| Overtime | $27,000 (100%) |
| Travel | $63,000 (100%) |
| Equipment and supplies | $59,000 (100%) |
| Contracts | $91,000 (25%) |

Navigate to the station using the Garmin. Complete I-III *BEFORE ENTERING THE WATER.*

****ALL SAMPLERS MUST WEAR GLOVES ALL THE TIME**** ****RINSE ALL EQUIPMENT with AMBIENT****

****COLLECT AIR DEP at FIRST STATION of DAY**** ****FILL OUT DATASHEET for REJECTED SITE****

****SAVE ALL USED FILTERS IN LABELED, SEALED BAGS**** *****DON'T TRAMPLE WHERE YOU SAMPLE!*****

I. Take photos w/ Camera A of storyboard, ground, and panorama. Verify photos and record #s (verify/#).

II. SURFACE WATER SAMPLES (all samples collected ~6" below surface) DUPE if directed.

A. Vacuum pumped samples *Open air dep blank.*

-Place new nitex screen on sampler intake, save bag and label with Station ID.

-Rinse insert w/ ambient. Place new 1-L poly in chamber, pump ½-full, rinse. Pump full, cap, set aside.

-Put on mercury sampling gloves with partner, sample using clean hands/dirty hands method:

DIRTY: Rinse insert for mercury bottle and place in chamber. Open outer bag of Hg bottle.

CLEAN: Open inner bag. DIRTY: Apply label to bottle & write Station ID, *without touching bottle*.

CLEAN: Place bottle in chamber, *then* uncap (hold cap). DIRTY: Pump to just overflowing.

CLEAN: Cap bottle, remove from chamber, place in inner bag and seal it.

DIRTY: Seal outer bag and place sample in black plastic bag inside Hg cooler (***NO*** ICE).

-Remove screen from intake, fold, place back in original, labeled bag. Drain chamber and tubing.

B. Screened water samples *Close air dep blank.*

Use 1-L poly of screened water (from A). Shake poly before subsampling each time.

-**Fill each of the following bottles ½-full to rinse, then** fill at least to neck, place bottle **ON ICE**:

♦ **BLUE** (TN/TP, 125-mL) ♦ **GREEN** ($SO_4$/Cl, 125-mL) ♦ **YELLOW** (DOM, 60-mL)

-Into **pre-preserved** bottle (DO NOT RINSE), fill to top (**NO HEADSPACE, ON ICE**):

♦ **RED** (TOC, 40-mL VOA) **Collect 5 vials at every 20th station: Chopper 1

-Filter the screened water for the following samples as indicated:

♦ **PINK** (dissolved nutrients, 60-mL bottle, using 60-mL syringe)

- use pre-loaded **NYLON,** or Swinnex **NYLON** (rinse holder halves before placing new filter)
- remove plunger, attach filter, fill syringe, replace plunger, rinse filter by purging
- rinse bottle 3X with filtered water, refill syringe, fill bottle to neck, place bottle **ON ICE**

♦ **ORANGE** (DOC, 40-mL VOA) **Collect 5 vials at every 20th station: Chopper 2

- use the same 60-mL syringe (refill syringe barrel if necessary)
- attach **POLYSULFONE** (PSU) filter, refill syringe, replace plunger, rinse filter by purging
- filter into **pre-preserved** bottle (DO NOT RINSE), fill to top (**NO HEADSPACE, ON ICE**)

C. Chlorophyll sample

-Rinse large syringe. Draw water from 6" below surface into syringe. Plunge out air/water to 140 mL.

-Attach assembly with pre-loaded GFF filter, and filter as much as possible; record volume filtered.

-Remove assembly, draw ~50 mL air, reattach assembly, plunge to remove all excess water.

-Fold filter 2x to enclose filtered surface, place in micro-centrifuge tube, submerge filter with acetone.

-Label tube with Station ID and place in 500 mL dark brown plastic bottle **ON ICE**.

D. Check samples on ice

-**BLUE**, **GREEN**, **YELLOW**, **RED**, **PINK**, **ORANGE** bottles, brown chlorophyll bottle, labeled trash bag.

E. Bottom water sample DUPE if directed.

-Place filter, screen or bag cloth. Attach short or long tubing to top end of sampler.

-Gently place sampler on surface of sediment, use 60-mL SIDE syringe to purge tubing.

-Fill pre-preserved 60 mL syringe (**PURPLE**) with water from sediment surface, close valve.

-Check syringe to ensure NO AIR BUBBLES, and place syringe back in case (***NO*** ICE).

-Place filter/screen/bag in labeled sample pack bag bag; drain tubing.

III. DEPLOY SONDE at 6". Log and record readings (Do w/ water coll'n).

Read ORP at bottom by lowering sonde gently to lay it horizontally on the bottom. Record depth.

IV. DEPTH - At 3 locations, measure water depth to soil (using **blue** rod first), then total depth to bedrock.
-Subtract water depth from total depth to obtain soil thickness. If ≥ 0.3 feet, soil cores should be 10 cm.

V. WATER COLUMN PERIPHYTON

A. Percent cover and composition
-Place sampling device as per randomization protocol, then estimate % cover using charts.
-Take polarized photo of the water column inside the device, from nadir; fill frame (verify/#).
-Record which of the categories of periphyton are present (circle Y or N for each one).

B. Biovolume measurement *Remember correction for offset on 1000-ml cylinder.*
-Harvest ≥90% of periphyton in device, excluding mats that stay on the bottom, with max 15 min. effort:
- **PF** (floating mat): skim off mat layer floating on surface; strip from large stems & wood
- **PE** (epiphytic "sweaters"): strip off stems of submerged plants & wood

-Make no attempt to separate bladderwort from periphyton. Ignore thin algae on plant stems.
-Measure volume using appropriate cylinder(s); use perforated cylinder to drain large mats.
-Record total volume; place all measured PF+PE (= PC) in one tub and mix to homogenize.

C. Sample collection
-Subsample homogenized biovolume by filling cup with BLUE lid to 120 mL line, label cup, discard remainder. If total volume <120 mL, add periphyton from surrounding area to get 120 mL.

VI. LOCATION *Mark Trimble position with white cardboard in ENP, orange elsewhere.*
-Set up Trimble and start logging coordinates. Collect soil cores around Trimble (see below).
-Log for at least 20 minutes (minimum of 36 readings), record coordinates on data sheet.

VII. SOIL, FLOC, AND BENTHIC PERIPHYTON ** *Record measurements in decimal cm* **

A. Collect and measure cores **Minimize PC and large roots**
-Gently lower core to soil surface, then slowly insert to 10 cm (using marker) while turning handle.
-DO NOT STOMP on core top (to minimize compaction and ensure no loss of floc).
-Seal and remove corer, ensure soil depth = 10±0.5 cm; if not, repeat until 10 cm unless shallow soil.
-Take photo of intact core, with wooden ruler, metric side showing. Record core thickness.
-Verify photo to ensure light was transmitted thru core and that core and ruler are in focus (verify/#).
-Note soil type(s) on data sheet; take photos of all cores.

B. Measure and collect floc and/or benthic periphyton **Label all containers with contents & Station ID**
-Measure and record floc and/or periphyton thickness. Push core up to remove overlying water.
-Pour floc into 500-mL bottle; combine all 3 samples (use 2nd bottle or tub if necessary).
-If benthic periphyton mat is present, remove and place in sample cup with WHITE lid. Label cup.
-If volume larger than a cookie is present, use a bottle or tub. Collect PB from only one core.

C. Collect soil
-Combine all 3 cores (regardless of soil type) in pre-weighed plastic tub, label and seal.
-Clean soil core equipment with ambient water and brushes.

VIII. MOSQUITOFISH
-Collect 15 mosquitofish (or as many as possible in 15 minutes). Catch large fish if possible.
-Place in labeled bag and add water so fish are suspended; evacuate air when sealing bag.
-Verify species and place bag **ON ICE**.

IX. SAWGRASS COLLECTION
-At stations ending in 0 or 5, collect an entire representative* plant, including roots.
-At odd-numbered stations, clip the middle 20 cm of one *leaf from each of 3 different *plants.

X. AERIAL PHOTOGRAPH (using Camera B), INCLUDING REJECTED STATIONS
-When leaving, take aerial photo of the site from 100-200 feet (verify/#). Record at next station.

**__**Call in Sample Times every day** *(by 2:00 pm)*__**

Navigate to the station using the Garmin. Complete I-III *BEFORE ENTERING THE WATER.*

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DIRTY: Seal outer bag and place sample in black plastic bag inside Hg cooler (***WITH*** ICE).

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- rinse bottle 3X with filtered water, refill syringe, fill bottle to neck, place bottle **ON ICE**

♦ **ORANGE** (DOC, 40-mL VOA) **Collect 5 vials at every 20th station: Chopper 2

- use the same 60-mL syringe (refill syringe barrel if necessary)
- attach **POLYSULFONE** (PSU) filter, refill syringe, replace plunger, rinse filter by purging
- filter into **pre-preserved** bottle (DO NOT RINSE), fill to top (**NO HEADSPACE, ON ICE**)

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